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Bank liquidity-stress testing and Basel III implementation in Indonesia

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Abstract

This study analyzes the possibility of the implementation of the Basel III, namely the rules of banking sector. The population analyzed in this study comprises the 120 banks in Indonesia. The result shows that Indonesian banking sector has tremendous value if the Basel III standards is applied in Indonesia. Bank BCA has the lowest values with a score of 8.89 while Bank BRI has the highest value with a score of 9.68. This study concludes that the standard rules of Basel III would be able to be implemented in Indonesia.

Abstrak

Penelitian ini menganalisis kemungkinan penerapan Basel III, yang berupa peraturan sektor perbankan. Populasi yang dianalisis adalah 120 bank di Indonesia. Hasil penelitian ini menunjukkan bahwa sektor perbankan Indonesia memiliki penilaian yang sangat baik bila peraturan standar Basel III diterapkan, dengan nilai terendah adalah BCA dengan penilaian 8,89 dan nilai tertinggi diperoleh Bank BRI dengan penilaian 9,68. Laporan penelitian ini menunjukkan bahwa peraturan standar Basel III dapat diterapkan di Indonesia.

Introduction

Bank is an intermediary institution that serves as a bridge between those who have surplus funds and those in need of the fund. Bank is a financial institution whose main activities center on demand deposits account, savings, and depository. The bank's primary goal is to serve as a fund collector of people who have their surplus funds, then distribute them to people in need of these funds in the form of investments and loans.

According to Varotto (2011), during the period 2007-2012, the world is once again facing the worst global financial crisis since the Great Depression in 1930, which can be seen from the standard rate of 5.36%, the third highest since 1932 (5, 43%) and the Great Depression (8.42%). This crisis started because of the economic bubble caused by residential mortgage-backed securities, but which directly led to the global financial crisis is the inability of financial institutions, including banks, securities in managing their selling.

When the economic boom that occurred in 2006, the US market is assumed that the market in favorable circumstances. Production of commodity housing increased exponentially (57% in the first quarter), income sector has the same pattern (predicted GDP rose 4%). Bank sees this as an opportunity to expand their market network, so they began to create two new types of securities: Mortgage-Backed Securities (MBS), is a valuable asset that is backed by residential mortgage-backed securities and Colleterized Debt Obligation (CDO), is an obligation securities from lower rate of MBS securities. This is the first step in shaping the global financial crisis in 2007-2009 . This assessment can be seen from the increasing drastically the default rate of these two securities from

0.37% in 2007, to 2.02% in 2008, until 5.36 % in 2009 (Varotto, 2011).

In mid-2006, world economy started to enter burst state. Residential commodities which were predicting will keep going up, stated to change downturn drastically: Housing prices became cheaper than interest rates that need to be paid. As results, MBS securities prices started to drop, and many CDO securities become default.vThis is because CDO rate is the lowest in all of securities sold on market.

Banks also increased their influence to make loans to the public, leading to a stretch of bad debt and over-leverage, Government Bank where they rose leverage their assets collateral circulation exceeds their own. Other banking practice is to Off-Balance Sheet, where they practice the method of receiving income by serving as the management of securities between two unrelated parties

The latter crisis is insurance group AIG (American International Group), approaching liquidation because many banks are listed in standard AIG in the same time when their securities matured. The government should provide a big bailout for banking sector, $ 700 million, which is implemented in the TARP (Troubled Asset Relieve Program) through the Congress of the United States (United States Congress, 2008).

Reviewing the global financial crisis caused by the Residential Mortgage Backed Effect, the Basel Committee on Banking Supervision, the organization responsible for overseeing the settlement of international banking sector, feel the need to assess the Basel III regulations which will be implemented from 1 April 2013 until March 31, 2018 worldwide according to the Basel Committee on Banking Supervision (2013a).

Allocation of capital structure undertaken by the banking sector is still using the Basel II standard regulations, the assessment of risk management and capital levels held still follow standard rules of Basel before, With the new Basel III standards, hopefully the bank will prepare owned capital ratio in accordance with the new standards proposed by the Indonesian central bank (Bank Indonesia , 2012).

As the foregoing points, see the rapid changes of economy in Indonesia, the pattern of the previous global financial crisis, we need to review the performance of the banking liquidity as accurate as possible. With the possibility of Assessment experimental implementation of Basel III, the researchers tried to assess liquidity and performance of the banking sector through the Bank Indonesia Liquidity-Stress Testing. From that point on the back ground of this research, the researcher proposes the research proposition: Is bank liquidity stress testing done for the Indonesian banking sector can meet the standards of Basel III ?

According to Brunnermeir dan Pedersen (2010), they have come to conclude that in Bank Liquidity-Stress Testing model, there are two models of liquidity need to be noted, which they called spiral liquidity: first, market illiquidity as results of trying to achieve higher funding, caused by higher margin rate; and second, effect of traders incapability to help funding in market activity caused by lowered trading position. Other research done by Boss et al. (2006) and Aikman et al. (2009) explained that risk owned by bank whenever bank doing clearing or settlement within banking sector network. Higher credit rate and liquidity performance when bank is in demand connected through network have heterogeneous effects. However, models in both of these researches have not calculated risk taken by bank in off balance sheet transaction. In liquidity ratio calculation, ratio used was Acid Test Ratio, as the simplest liquidity ratio to measure banks' ability in complying their short-term liabilities.

Model in research done by Van den End (2009), proposed that there are three steps in assessing liquidity stress models,

first is effects of the first scenario; second is implementation of new bank policyr e-garding capital structure; and third is as-sessing second steps effects. He explained the importance to assess the second step's effects considering scenario form bank's plan for contingency mostly only calculat-ing effects after the first scenario, and it didn't considered effect of policy imple-mentation itself. Result of this research shows importance of buffer in banks opera-tion which includes in three steps of li-quidity stress models assessment.

To see leverage that should be used by banking sector in operation, Basel III has proposed new ratio to assess compari-son between core capital (Tier 1 Capital) which became the most liquid assets, whenever credit is in need, but external funding is limited or none at all; with assets owned by bank. Ratio calculated hopefully will have 6% (maximal rate) to support bank's operation. To overview liquidity performance itself, according to Basel III standard (2013), is in need of adequate cap-ital structure, whether it's Tier 1 Capital, or overall capital. However, both assessment of Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio needed national stan-dard regulation, and Capital Conservation Buffer needed bank internal assessment align with operational activity during those periods, this research limit itself to Capital Adequacy Ratio (CAR) variable to assess capital adequacy.

Basel III is the new structure of the criteria that will be used to assess banks' stability. This criterion was delivered after seeing many cases worldwide economic cri-sis. In Basel I, Balin (2008) explains that the Basel I standards provide perverse incen-tives for banks, dizziness their approach to risk weighted approach. Basel I only pro-vide banking management structure based on the G10 countries. While Basel III itself assessed by Barth et al. (2006) does not in-clude the factors of market development, standards can not have the same weight as a universal, because there is the difference between the actual accounting practices and banking regulations. According to Khan (2013), he explains that the Basel III based on total assets, capital vuffer circulation, stress testing, and risk management controls. However, in this study, it is estimated that the bank won' t be able to achieve the same level of income they were taken before the global financial crisis of 2007-2012. In re-turn, this provides a more robust risk man-agement for banks, allowing them to over-come the next crisis, and higher performing level in their own industry.

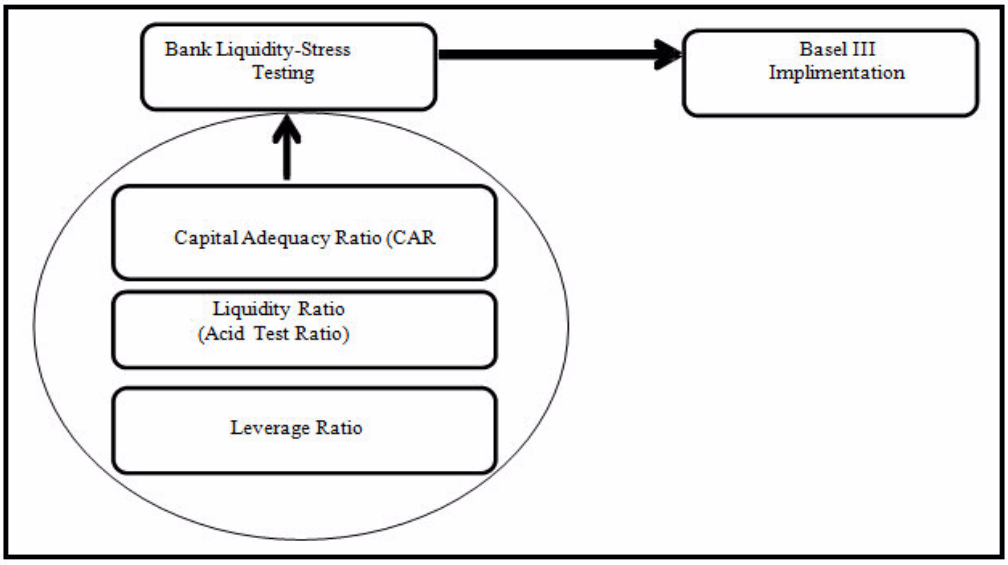

Figure 1: Theoritical Framework

Basel III is used to prevent excessive risk and exposure levels in tissue banking sector. Reviewing the case of the global financial crisis that occurred during the period 2007-2012, the Basel Committee has come to conclude that banks need to calculate their own risk assessment through their capital levels, leverage, and bank management is done by the bank manager. Therefore, in this study, researchers will assess the performance of banks in Indonesia's banking sector to implement Basel III in their banking operations, through Bank Liquidity-Stress Testing (Figure 1).

Methods

The secondary data in this paper is collected from the financial statements of Bank Mandiri, Bank BRI, Bank BNI and Bank BCA during the crisis period (2007-2009), the transition period (2010-2011) and post-crisis (2012-2013). The data used in this research is quantitative.

The study took a population of 120 banks in Indonesia, according to data from the Register of Commercial Banks Reporting DIS (Debtor Information System) by Bank Indonesia (2012), which includes private banks, foreign exchange banks, Non-Bank Foreign Exchange, Commercial Banks, Foreign Banks, Islamic Bank, and Civil Bank Loan. The method used in this study using non-random sampling method of sampling, this means that not all of the population 's members will be taken as a sample' s members. The sampling method to assign certain characteristics as criteria for sampling. The sampling method used by researchers to sample is determined based on two criteria, namely (1) it has a core capital above the 30 Trillion Rupiah. (2) it has a complete set of financial statements.

Of the population, only four banks criteria matched sample as banks that have a core capital above the 30 Trillion Rupiah and complete set of financial statements. Four banks matched the creteria of the sample are Bank Mandiri, Bank BRI, Bank BNI and Bank BCA.

The variable of bank liquidity testing is calculation of liquidity rate owned by bank to comply with their short-term and long-term liabilities. The variable indicator used is acid test ratio (Weston and Brigham, 2013). It is a ratio used to assess comparison between cash allocation and other liquid securities with Short-Term Liabilities. The variable of bank stress banking is Calculation of stress rate for banking capital allocation to see their capital adequacy and comparison to its assets. Whereas the variable indicator is capital adequacy ratio (CAR) (Basel Capital Accord, 1998) and leverage ratio (Consultative Document Basel III, 2013c). CAR is a ratio used to assess bank's capital allocation with risk-weighted assets resulting from those capitals, while leverage ratio is a ratio used to assess comparison between leverage that bank should impose in contrast with their capitals. The third variable of Basel III Implementation. It is a standard used to assess bank's allocation ability to comply with Basel III standard regulation (Consultative Document Basel III, 2013c). The variable indicator is benchmarking (Risk Management Association, 2 012) that is an index used to assess comparison between percentage of Bank Liquidity Testing variable and Bank Stress Testing variable align with Basel III standard.

Bank Liquidity Testing

Bank Liquidity Testing is conducted to assess the performance of the banking liquidity in the financial circulation in the market economy. Liquidity Ratio (Acid Test Ratio) is used to calculate the ratio of banks' ability to meet their short-term obligations. For this study, to calculate the capital structure according to Basel Committee on Banking Supervision (2013b), the ratio used is the Acid Test Ratio which calculates all allocations Extra cash with cash-

equivalent securities as a comparison to the short term liabilities:

$$\text{Acid Test Ratio} = \frac{\text{Cash} + \text{short term securities}}{\text{Short term Liabilities}}$$

This ratio is used as a simplified version of the LCR ratio (Liquidity Coverage Ratio) which is classified assets to level 1 (Cash and Short Term Securities) compared to the Liabilities (as a substitute for Net Cash Outflow, which is due within 30 days).

Bank Stress Testing

Bank Stress Testing is a test that is performed to measure the bank 's ability to perform operational activities whenever faced in changing market fluctuations. To calculate the Bank Stress Testing, this test requires two variables, namely Ratio CAR (Capital Adequacy Ratio) and Basel III leverage ratio.

Ratio CAR (Capital Adequacy Ratio)

CAR Is that calculates the ratio between the ratio of capital owned by the bank, including the risks. According to Gallagher and Andrew (2003). The calculation of the financial management required for this ratio is:

$$\text{CAR} = \frac{\text{Tier 1 Capital} + \text{Tier 2 Capital}}{\text{Total of Risk Weighted Assets}}$$

Tier 1 Capital under Basel Committee on Banking Supervision (2011) is the capital of the bank which includes common stock, stock replenishment premium (premium from the sale of shares), the accumulation of income, retained earnings and other income in accordance with the standards of the national banking system. While Tier 2 capital under the Basel Committee on Banking Supervision (2011) is the capital of the bank which includes premium stock; other income in addition to retained earnings; revenue from value-added books; hybrid instrument, which is an instrument that is mixed between capital and liabilities with maturity level under normal obligations, usually within 5 years. This ratio is the simplest method of calculation compared to the Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR) because there is a ratio haven *t* calculate net cash flow and allocation based on additional sources of funding, according to calculations of the Basel Committee On Banking Supervision (2010).

Basel III Leverage Ratio

This ratio according to Basel Committee on Banking Supervision (2013c) is calculated by the ratio between Tier 1 Capital and Assets owned by the Bank:

$$\textit{Basel III Leverage Ratio} = \frac{\textit{Tier 1 Capital}}{\textit{Total Assets Owned by Bank}}$$

This is done by calculating the ratio of Tier 1 Capital as the numerator compared with denumenator assets. Assets become denumenator variables to show the bank "s market risk exposures outstanding. The exposure is calculated by combining all of the assets owned by the bank. Two of these variables will be determined by the following calculation to be used for variable Implementation of Basel III.

Implementation of Basel III

Basel III is a decision proposed by the Basel Committee, planned to carry out all over the world effect from 1 April 2013 to 2015. However, due to the global financial crisis in 2007-2012, the implementation schedule has been extended until March 31, 2018 . Basel III has three lynchpins:

Minimum Capital Requirement

According to the decision proposed by the Basel Committee (2011), the Bank should have a ratio of 4.5% of the short-term equi-

ty of Tier 1 Capital (2.5% higher than the Basel II) while for Tier 1 capital, the Bank should have a ratio of at least 6% of Risk-Weighted Assets (2% higher than the Basel II). Risk-Weighted Assets Basel I standards (1998) can be calculated using the Capital Adequacy Ratio. Basel III also proposes additional buffer circulating capital in the form of mandatory and discretionary capital conservation buffer cyclical counter with a ratio of 2.5%, to serve as an additional buffer when interest rates on loans are high.

Leverage Ratio

The proposed leverage ratio is 3% higher than the ratio of Tier 1 Capital and average banks' consolidated assets.

Minimum Liquidity Levels

For benchmarking, Risk Management Association (2012), have suggested that benchmarking assessment should have the upper quartile, lower quartile, and between strong and weak median ratio. Each quartile has a range of 25%, so that the 4-level assessment. Therefore, in this study, researchers classified all ratings Basel III Standards by Basel III (2011), for this level in Table 1.

Analytical Techniques

To analyze bank liquidity stress testing is done for the Indonesian banking sector to implement Basel III, this assessment is required, which includes the conclusion of research propositions. In order to assess the Bank's liquidity parallel test compliance with the Basel III standards. The banks' performance in the Indonesian banking sector, can be done by calculating the percentage of Acid Test Ratio, Cash and Equivalents of cash-effects available in Bank Mandiri, Bank BRI, BNI, and BCA during the period 2007-2013, in line with the proposed calculation of the operating variables.

In the next step of calculation, Bank Stress Tests, which test the adequacy of capital in the banking sector of Indonesia, can be done by the following steps. (1) Calculate the Capital Adequacy Ratio (CAR) available in the allocation of capital Bank Mandiri, Bank BRI, BNI, and BCA during the period 2007-2013; parallel with the calculation proposed in operational variables. (2) Calculate Tier 1 Capital available at Bank Mandiri, Bank BRI, BNI, and BCA during the period 2007-2013, in line with the calculation proposed in operational variables. (3) Calculate Tier 2 Capital available at Bank Mandiri, Bank BRI, BNI, and BCA during the period 2007-2013, in parallel with the calculation of the proposed operational variables. (4) Calculate the Basel III Leverage Ratio available at Bank Mandiri, Bank BRI, BNI, and BCA during the period 2007-2013, in line with the proposed calculation of the operational variables.

Table 1: Benchamarking Standard of Basel III

Instruments	Basel III Standard	Benchmarking Value	Precentage Per Level
Tier 1 Capital	4,5 - 6% RWA	6-10	0.3%
Tier 2 Capital	100% of Tier 1 Capital (Maximal) 3,5 – 2,0% RWA	6-10	0.3%
CAR Ratio	8 – 14%	6-10	1%
Acid Test Ratio	60 – 100%	6-10	10%
Basel III Leverage Ratio	3% - 6%	6 -10	0,7 %

Source: Basel III (2011), Risk Management Association (2012).

In order to assess the Basel III standards by banks' performance in accordance with Basel III test, to verify compliance with these two variables can be done by the following steps. (1) After all the capital structure allocation ratio has been calculated, the next step is the assessment of the Basel III standards by benchmarking or comparison between the allocation of minimum capital structure in accordance with the Basel III with a combination of ratings of Bank Liquidity-Stress Tests, where the Basel III minimum standards will be assessed grades 6-10 (From received outstanding), and the value will be compared with the results of the test. (2) The results of the assessment benchmarking will be averaged to achieve overall results during the current annual assessment (2007-2013) of the bank an example: Bank Mandiri, Bank BRI, BNI, and BCA.

Results and Discussions

Testing liquidity bank

Results for Acid Test Ratio has many fluctuations. The most common is the opposite, where the values of short-term securities do not have a significant change, which causes the Acid Test Ratio has a pattern of decline. To assess changes in the value of the data, can be seen in the Table 2.

As can be seen from Table 2., The changes to Bank Mandiri, BRI, BNI, and BCA is relatively stable. The most significant changes occurred during the years 2010-2011, when banks in the transition period, the average value of 18.96% rise in all banks. This phenomenon is caused by government policies to stabilize the banks by providing a bailout in the form of securities issued by banks. The results can be seen in the post-crisis period when the Acid Test Ratio values ranging reserved (Table 3).

Bank Stress Testing

The financial statements of the Bank Stress Testing analysis showed some remarkable results. In according to CAR, additional Risk Weighted Assets (RWA) from the operational point of view, that in the year 2009 financial statements, only RWA Credit and Market. This suggests that the market risk has been calculated diversifically, so that the risk of fluctuations has been added in the calculation of risk.

Simple allocation of Bank Indonesia (Central Bank) securities and other bank 's current account has been allocated since the first quarter 2010 Financial Statements, making Risk Weighted Assets (RWA) is easier to be allocated, because the account each have their own risk, either in amount or Foreign Currency.

Allocation of Tier 1 Capital and Tier 2 Capital in accordance with the level of risk proposed by Basel III. (1) In the Tier 1 Capital, started by adding an additional allocation and reduction factor of core capital. (2) In Tier 2 Capital, have been added in the form of a High Level (Upper Tier 2), Lower Level (Lower Tier 2) with a maximum ratio of 50% of Tier 1 Capital, Additional Capital and reduction factor. Tier 2 Capital also has decided to be a maximum of 100% of Tier 1 Capital. (3) Other factors such as the reduction of Tier 1 and Tier 2 Capital has been allocated to their own level, and Tier 3 capital has been deleted, in line with the Basel III rules. To assess this variable, the value of the ratio can be shown in the Table 4.

Table 2: Acid Test Ratio

Bank\Year	2007	2008	2009	2010	2011	2012	2013	Average
Bank Mandiri	76.52%	75.04%	76.33%	83.15%	108.71%	106.50%	101.75%	89.71%
Bank BRI	130.62%	107.46%	124.30%	144.18%	151.95%	148.11%	125.68%	133.19%
Bank BNI	96.99%	65.16%	67.23%	89.61%	98.37%	99.73%	70.17%	83.89%
Bank BCA	140.00%	108.49%	156.59%	103.22%	136.97%	91.21%	75.93%	116.06%

Source: Bank Financial Report

Table 3: Comparison of Current Annual Acid Test Ratio

Bank\Year	2007- 2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013
Bank Mandiri	-1.47%	1.28%	6.83%	25.56%	-2.21%	-4.75%
Bank BRI	-23.16%	16.84%	19.88%	7.77%	-3.85%	-22.42%
Bank BNI	-31.83%	2.07%	22.38%	8.75%	1.36%	-29.56%
Bank BCA	-31.51%	48.10%	-53.36%	33.75%	-45.76%	-15.28%

Source: Bank Financial Report

Table 4: Capital Adequacy Ratio (CAR)

Bank\Year	2007	2008	2009	2010	2011	2012	2013	Average
Bank Mandiri	24.33%	18.90%	14.72%	14.61%	16.86%	16.31%	15.91%	17.38%
Bank BRI	17.96%	14.26%	14.05%	14.17%	15.21%	16.57%	17.47%	15.67%
Bank BNI	16.39%	14.77%	14.65%	14.27%	17.50%	17.15%	16.59%	15.90%
Bank BCA	21.56%	16.91%	16.38%	14.69%	13.74%	14.93%	16.15%	16.34%

Source: Bank Financial Report

Table 5: Comparison of Current Annual Capital Adequacy Ratio (CAR)

Bank\Year	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013
Bank Mandiri	-5.43%	-4.18%	-0.11%	2.26%	-0.55%	-0.40%
Bank BRI	-3.70%	-0.21%	0.11%	1.05%	1.35%	0.90%
Bank BNI	-1.62%	-0.12%	-0.38%	3.23%	-0.35%	-0.56%
Bank BCA	-4.65%	-0.53%	-1.68%	-0.95%	1.19%	1.22%

Source: Bank Financial Report

Table 6: Basel III Leverage Ratio

Bank\Year	2007	2008	2009	2010	2011	2012	2013	Average
Bank Mandiri	8.63%	7.75%	6.74%	7.03%	9.90%	9.55%	10.67%	8.61%
Bank BRI	8.70%	7.88%	7.58%	7.97%	8.82%	10.30%	11.23%	8.93%
Bank BNI	6.44%	7.33%	6.89%	8.03%	11.21%	11.14%	12.03%	9.01%
Bank BCA	8.68%	8.48%	8.13%	8.43%	9.03%	9.51%	11.11%	9.05%

Source: Bank Financial Report

Table 7: Comparison of Current Annual Basel III Leverage Ratio

Bank\Year	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	012-2013
Bank Mandiri	-0.88%	-1.01%	0.29%	2.87%	-0.35%	1.12%
Bank BRI	-0.82%	-0.30%	0.39%	0.84%	1.48%	0.93%
Bank BNI	0.89%	-0.44%	1.14%	3.18%	-0.07%	0.90%
Bank BCA	-0.20%	-0.35%	0.30%	0.60%	0.49%	1.59%

Source: Bank Financial Report

In contrast to the Acid Test Ratio results, for the results of the CAR, does not have significant changes in all of the seven-year period. This is because the CAR symbolized real assets owned by banks compared with the bank's risk exposure. Especially in 2008, in the midst of crisis, CAR started to go backwards due to the changes in the higher market risk and operational risk The results shown in the four banks can be concluded acceptable, whereas in 2010 the change of accounting, risk begins diverse market exposure and exposure to operational, the CAR of the four banks do not have a significant change, which means that the risk of an asset has been taken into account during this perfectly. However, a negative change indicates that develop in reverse rate in the current annual report (Table 5).

For Basel III ratio, is calculated by comparison with the core capital (Tier 1 Capital) and assets owned by the bank, it can be seen that the value of the four banks have fluctuations that is in reverse. This is due to the added value of an asset that serves as denumenator of Tier 1 Capital.

A common problem found in the banking sector to implement the Basel III regulatory is high rate of capital adequacy proposed by Basel III. From Acid Test ratio, researchers have come to conclude that external funds from customer (DP3) when added to the calculation of passive accounts to be paid in the form of short-term liabilities, have a significant change in rates: 68.83%, of each bank: Bank BNI (46.80%), Bank Mandiri (55.78%), BCA (80.61%), and BRI (92.13%). This calculation is used in a worst case scenario, when the banks have lost the trust of their customers, and must pay all accounts simultaneously. Assessment of the overall standard of the Basel III still showed promising results, with the lowest level 8. The reason why the bank has the most significant level is caused high LDR (Loan-to-Deposit Ratio), supported by the CAR ratio is also in the same state. The LDR BRI at 90%, while the rate of CAR is still at 16%. Another problem found in the Indonesian banking system is over-reliance Central Bank intervention. During the operation of the four major banks in the sample within a period of 7 years, intervention performed at least 3 times, causing additional Operational Risk Assets in the next quarter.

Implication to the theory of this research is that scholars will be able to assess the factors to be decisive in the implementation of Basel III for further research. It can be seen from the characteristics shown between all three periods. (1) In the crisis period, the change in the pattern positive asset, but is followed by the increase in risk weighted assets (RWA). Acid test ratio also shows that bank liquidity has fluctuated, proving that the bank ‘s ability to meet their short-term liabilities isn‘t stable. (2) In Transition, achieved development of assets, but the risk is also in line with these developments. Acid Test Ratio results are also starting to get more positive results, but these changes are stagnant (does not have a significant changes). (3) In the post-crisis period, the development of assets also increased, but the exposure to market risk in line with the development of the assets. Acid Test Ratio began to have a pattern of decline.

For practical implications, investors can see that BRI has the largest growth rate during the period 2007-2013, with 9.68 assessment of the average value of benchmarking. However, the lowest score obtained by the Bank amounting to 8.89. Investors may also consider other factors such as the BCA bank with the highest transactional account, which led to a low assessment of exposure to market risk and operational risk, to support their investment operations.

The government can also see the highest fluctuations caused by their monetary policy on banks, for example, a bank securities are carried by the government was due to increased exposure to risk (RWA). Suggestions to avoid this cases will be explained in the Conclusions and Suggestion.

Conclusion

Bank Liquidity Testing is calculated based on the Acid Test Ratio; the lowest value obtained was 65.16% by BNI during the period of 2008, from received a median of assessment 60%, which means the value when the minimum counted in this calculation, this value can be accepted liquidity standard.

On Bank Stress Testing, which is calculated based on the Capital Adequacy Ratio (CAR) the lowest value obtained was 14.05% Posted by BRI during the period of 2009 from 14% the highest value assessment and the Basel III leverage ratio of 6.44% is the lowest valued by BNI during 2007 the highest rating scale of 6%, which

means that the bank "s ability to perform banking operations outstanding.

In the implementation of Basel III assessment calculated by benchmarking, every meeting 9:27 outcomes Bank (the Bank), 9.68 (BRI), 9.53 (Bank BNI) and 8.89 (BCA) of the grading scale of 1-10, which means all four banks have very good judgment in the application of the Basel III standard.

Implementation of Basel III can be implemented in the Indonesian banking system, with the average valuation has not been below 8 of benchmarking standards, which shows remarkable assessment of the scale of 1-10.

Some things to note are as follows. (a) Whenever a bank in difficulty, the Central Bank has always intervened directly for the bank, in the form of Central Bank Securities or others. (b) Central Bank intervention led to rise to Risk Weighted Assets Operation banks.

French et al. (2010) proposed that the implementation of policies regarding the banking sector, there are two things to note: First, the Government should not pay attention to intervention effects caused by each bank, but as the system as a whole. Second, is a stretch of the rise of intervention by the government itself, the cost of failure, it is the effects of tax and economic development as a whole. The information given to the public also needs to be taken into account to achieve market discipline and avoid short-term activities for profit (short sellers) that will accelerate the pace of the crisis by increasing the extent of the Government will be obtained during the crisis period fluctuations (higher and lower asset value). Bailout in the form of capital injections from the government and changes in the allocation of costs liability cause of the failure to raise, this is due to it "s effect on the activity of the price in long-term. Value of derivatives held by banks will go down even if there ‘s external injetion. This is evidenced by the data post-crisis period Acid Test Ratio began to fall.

Researcher suggested that to construct resilient banking system, Government should reduce their intervention for banks. This intervention can directly effects on market. Align with research done by Allen and Carletti (2010) regarding Government management for banking system, few steps that can be taken by Government to keep resilience of Indonesian banking sector are creating Market Disc ipline, Leverage of Banking Sector, Flexible Bank Obligation, Taxes Management for Obligation, Market Activity observation, and Oher institution role to simultaneously affect banking system.

In this study, researchers found some limitations. (1) Data collecting is secondary data, which is still debated whether it "s relevant in banking practice. Most of the financial statements in the period quarter has nott been audited yet. (2) Calculation System Basel III standards used in this study is still experimental, and in the form of real simplification of the calculation. (3) The results of this study did not describe the assessment of the crisis in Indonesia itself. According to changing theory *Juglar Cycle* proposed by Juglar (1862). Changes caused by Acid Test risi ng rate was started in Indonesia when there is bullish (rise) in the transition period (2010- 2011), the external investment, Foreign Direct Investment (FDI) increased by 70%. Changes during the crisis period is also supported by Kitchin(1923), who proposed one of the factors of business crisis cycle caused by delay or lag time from the information gathered in their business sector. This delay may extend to 3-5 years. According to data from the ratio of four banks, there ‘s growth was reversed in the post-crisis period (2012-2013).

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